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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,283

04/14/2004

Ching-Pang Lee

146806

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7590

08/23/2005

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EXAMINER

WIEHE, NATHANIEL EDWARD

ART UNIT

PAPER NUMBER

3745

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/824,283	LEE ET AL.	
	Examiner	Art Unit	
	Nathan Wiehe	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04142004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 14 April 2004 is noted. The submission is in compliance with the provisions of 37 CFR 1.97 and 1.98. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

2. The disclosure is objected to because of the following informalities:

In paragraph [0002] "combustion gases impacting the rotating rotor blades transfer heat into the airfoils" should read --combustion gases impact the rotating rotor blades transferring heat into the airfoils--;

In paragraph [0003] "due" should be removed from the first line; and

On page 15 "TITLE" should read --METHOD AND APPARATUS FOR REDUCING TURBINE BLADE TEMPERATURES--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4-7, 10-12, 14 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Winstanley (5,246,340). Winstanley discloses an airfoil (14), used in a gas turbine engine (10), including a first sidewall (22) and second sidewall (24) coupled

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together at leading edge (18) and trailing edge (20), which defines an internal cavity. Winstanley's airfoil also includes rib walls (40,42,44), which define a cooling circuit in which cooling fluid travels from a feed chamber (56) to a transition chamber (58) and then to an ejection chamber (60-66). The chambers of Winstanley's airfoil are joined in flow communication with each other by openings (43,45) in said rib walls. Winstanley's airfoil also includes a plurality of film cooling holes (70) in sidewall (22) extending into cooling chamber (60-66) and trailing edge slots (72) extending into cooling chamber (60-66). Winstanley's airfoil further includes a leading edge circuit including a feed chamber (54) and a cooling chamber (52) in flow communication with each other by a plurality of openings (39).

5. In regard to claims 1, and 4-6 the method of fabrication would have been apparent from the patent of Winstanley.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 3, 8, 9, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winstanley in view of Corsmeier (5,813,835). Winstanley discloses the invention substantially as claimed except for the use of pressure and suction side circuits. Corsmeier discloses a cooled gas turbine airfoil (16), which includes a pressure side and suction side cooling circuit (22,24). It would have been obvious to

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one of ordinary skill in the art at the time the invention was made to modify the airfoil of Winstanley by locating cooling circuits on the pressure and suction sides, as taught by Corsmeier in order to compensate for the differential heat loading on the two sides of the airfoil.

8. In regard to claims 2 and 3, the method of fabrication would have been apparent from the airfoil of Winstanley as modified by Corsmeier above.

9. Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winstanley in view of Jackson (5,820,337). Winstanley discloses the invention substantially as claimed except for the use of purge chambers. Jackson teaches the use of purge chambers (54 in figure 4) in a turbine airfoil (20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the airfoil of Winstanley by including purge chambers, as taught by Jackson, in order to provide more localized cooling of the sidewalls.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Wiehe whose telephone number is (571)272-8648. The examiner can normally be reached on M-F.

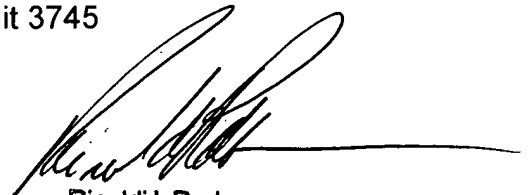
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nathan Wiehe
Examiner
Art Unit 3745



Rinaldi I. Rada
Supervisory Patent Examiner
Group 3700